WHAT IS CLAIMED IS:


1.  An information processing system having a first information processing apparatus and a second information processing apparatus for transferring information via a network, said information processing system comprising:

first execution means for performing a connection procedure for transferring main information from said first information processing apparatus to said second information processing apparatus; and

second execution means for determining whether said first information processing apparatus has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that said first information processing apparatus has a transmission function but not a receiving function, and for performing a connection procedure for transferring the main information from said second information processing apparatus to said first information processing apparatus.


2.  An information processing system according to Claim 1, wherein, in the connection procedure for transferring the main information, one of said first information processing apparatus and said second information processing apparatus

transmits, to the other apparatus, information of the connection destination to which the main information is to be transmitted or from which the main information is to be received.

3. An information processing system according to Claim 1,

wherein one of said first information processing apparatus and said second information processing apparatus transmits, to the other apparatus, invitation information for inviting a connection, and

wherein the information processing apparatus receiving said invitation information transmits acceptance information indicating that said acceptance is received, to the information processing invitation that has transmitted said invitation information when the invitation based on said invitation information is to be accepted.

4. An information processing system according to Claim 1, wherein one of said first information processing apparatus and said second information processing apparatus transmits, to the other apparatus, function information indicating which one of the bidirectional function and the unidirectional function the apparatus itself has.

5. An information processing system according to Claim 4, wherein one of said first information processing apparatus and said second information processing apparatus determines whether or not the other party is able to communicate with the apparatus itself when said function information is received from the other party, and when the other party is able to communicate with the apparatus itself, the apparatus itself is registered in the other party.

6. An information processing system according to Claim 4, further comprising a third information processing apparatus for transmitting said function information of one of said first information processing apparatus and said second information processing apparatus to the other party via said network.

7. An information processing system according to Claim 6,

wherein, to transfer the main information, the connection procedure performed between said first information processing apparatus and said second information processing apparatus is performed via said third information processing apparatus connected to said network, and

wherein the transfer of the main information between said first information processing apparatus and said second

information processing apparatus is performed without the
intervention of said third information processing apparatus.


8.    An information processing system having a first
information processing apparatus and a second information
processing apparatus for transferring information via a
network, said information processing system comprising:

first execution means for performing a connection
procedure for transferring main information in a first
direction between said first information processing
apparatus and said second information processing apparatus;
and

second execution means for determining whether at least
one of said first information processing apparatus and said
second information processing apparatus has a bidirectional
function for transmitting the main information and for
receiving the main information, or has a unidirectional
function such that the apparatus has a transmission function
but not a receiving function, and for performing a
connection procedure for transferring the main information
in a second direction differing from said first direction.


9.    An information processing method for use in an
information processing system comprising a first information
processing apparatus and a second information processing

apparatus for transferring information via a network, said
information processing method comprising the steps of:

performing a connection procedure for transferring main
information from said first information processing apparatus
to said second information processing apparatus;

determining whether said first information processing
apparatus has a bidirectional function for transmitting the
main information and for receiving the main information, or
has a unidirectional function such that said first
information processing apparatus has a transmission function
but not a receiving function; and

performing a connection procedure for transferring the
main information from said second information processing
apparatus to said first information processing apparatus
when said first information processing apparatus has said
bidirectional function.

10.  An information processing method for use in an
information processing system comprising a first information
processing apparatus and a second information processing
apparatus for transferring information via a network, said
information processing method comprising the steps of:

performing a connection procedure for transferring main
information in a first direction between said first
information processing apparatus and said second information

processing apparatus;

determining whether at least one of said first information processing apparatus and said second information processing apparatus has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that the apparatus has a transmission function but not a receiving function; and

performing a connection procedure for transferring the main information in a second direction differing from said first direction when said bidirectional function is possessed.


11. An information processing apparatus for receiving information from a second information processing apparatus via a network, said information processing apparatus comprising:

communication means for transmitting and receiving information; and

control means for performing various processes,

wherein said control means performs:

a first execution process for executing a connection procedure for receiving main information transmitted by said second information processing apparatus;

a determination process for determining whether said

second information processing apparatus has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that the second information processing apparatus has a transmission function but not a receiving function; and

a second execution process for executing a connection procedure for said second information processing apparatus to receive the main information transmitted by said information processing apparatus when it is determined in said determination process that said second information processing apparatus has said bidirectional function.


12.   An information processing apparatus according to Claim 11, wherein, in said second execution process, when it is determined in said determination process that said second information processing apparatus has said unidirectional function, the connection procedure for said second information processing apparatus to receive said main information transmitted by said information processing apparatus is skipped.


13.   An information processing apparatus according to Claim 11,

wherein, in said first execution process, first

connection information for receiving the main information transmitted by said second information processing apparatus is exchanged with said second information processing apparatus, and

wherein, in said second execution process, second connection information for said second information processing apparatus to receive the main information transmitted by said information processing apparatus is exchanged with said second information processing apparatus.

14. An information processing apparatus according to Claim 13, wherein, in said first execution process, said first connection information is received from said second information processing apparatus, and

in said second execution process, said second connection information is transmitted to said second information processing apparatus.

15. An information processing apparatus according to Claim 14, wherein control means performs a process for communicating with said second information processing apparatus on the basis of at least one of said first connection information and said second connection information.

16. An information processing apparatus according to Claim 11, wherein control means performs a process for receiving invitation information for inviting a connection from said second information processing apparatus via said communication means and for transmitting acceptance information indicating that said invitation is accepted, to said second information processing apparatus via said communication means when the invitation based on said invitation information is to be accepted.

17. An information processing apparatus according to Claim 11,

wherein control means further performs a process for receiving, via said communication means, function information indicating which one of said bidirectional function and said unidirectional function said second information processing apparatus has, and

wherein said determination process determines which one of said bidirectional function and said unidirectional function said second information processing apparatus has.

18. An information processing apparatus according to Claim 17, wherein control means performs a process for determining whether or not communication with said second information processing apparatus is possible when said

function information is received, and performs a process for registering said information processing apparatus in said second information processing apparatus when communication with said second information processing apparatus is possible.

19. An information processing apparatus according to Claim 17, wherein said control means further performs a process for transmitting said function information of said information processing apparatus to said second information processing apparatus via said communication means.

20. An information processing apparatus according to Claim 19, wherein said function information is transmitted to said second information processing apparatus via a third information processing apparatus on said network.

21. An information processing apparatus according to Claim 17, wherein said function information of said second information processing apparatus is received via the third information processing apparatus on said network.

22. An information processing apparatus according to Claim 11,

wherein, to transfer the main information, the

connection procedure performed with said second information processing apparatus is performed via said third information processing apparatus connected to said network, and

wherein, the main information transferred to and from said second information processing apparatus is transferred without the intervention of said third information processing apparatus.

23. An information processing method for receiving information from a communication party via a network, said information processing method comprising:

a first execution step of executing a connection procedure for receiving main information transmitted by said communication party;

a determination step of determining whether the communication party has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that said communication party has a transmission function but not a receiving function; and

a second execution step of executing a connection procedure for transmitting the main information when it is determined in the process of said determination step that said communication party has said bidirectional function.

24. A computer program for allowing a computer to perform a process for receiving information from a communication party via a network, said computer program comprising:

a first execution step of executing a connection procedure for receiving main information transmitted by said communication party;

a determination step of determining whether said communication party has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that said communication party has a transmission function but not a receiving function; and

a second execution step of executing a connection procedure for transmitting said main information to said communication party when it is determined in said determination process that said communication party has said bidirectional function.

25. An information processing apparatus for transmitting information to a second information processing apparatus via a network, said information processing apparatus comprising:

communication means for transmitting and receiving information; and

control means for performing various processes,

wherein said control means performs:

a first execution process for executing a connection procedure for transmitting main information to said second information processing apparatus;

a determination process for determining whether said second information processing apparatus has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that the second information processing apparatus has a transmission function but not a receiving function; and

a second execution process for executing a connection procedure for said information processing apparatus to receive the main information transmitted by said second information processing apparatus when it is determined in said determination process that said second information processing apparatus has said bidirectional function.

26. An information processing apparatus according to Claim 25, wherein, in said second execution process, when it is determined in said determination process that said second information processing apparatus has said unidirectional function, the connection procedure for said information processing apparatus to receive said main information

transmitted by said second information processing apparatus is skipped.

27. An information processing apparatus according to Claim 25,

wherein, in said first execution process, first connection information used by said second information processing apparatus to receive the main information transmitted by said information processing apparatus is exchanged with said second information processing apparatus, and,

wherein, in said second execution process, second connection information used by said information processing apparatus to receive the main information transmitted by said second information processing apparatus is exchanged with said second information processing apparatus.

28. An information processing apparatus according to Claim 27,

wherein, in said first execution process, said first connection information is transmitted to said second information processing apparatus, and

wherein, in said second execution process, said second connection information is received from said second information processing apparatus.

29. An information processing apparatus according to Claim 28, wherein control means performs a process for communicating with said second information processing apparatus on the basis of at least one of said first connection information and said second connection information.

30. An information processing apparatus according to Claim 28,

wherein control means further performs a process for transmitting invitation information, for inviting a connection, to said second information processing apparatus via said communication means, and

wherein said first execution process transmits said first connection information to said second information processing apparatus when the invitation based on said invitation information is accepted.

31. An information processing apparatus according to Claim 25,

wherein control means further performs a process for receiving, via said communication means, function information indicating which one of said bidirectional function and said unidirectional function said second

information processing apparatus has, the function information being transmitted by said second information processing apparatus, and

wherein said determination process determines, on the basis of said received function information, which one of said bidirectional function and said unidirectional function said second information processing apparatus has.


32. An information processing apparatus according to Claim 31, wherein control means performs a process for determining whether or not communication with said second information processing apparatus is possible when said function information is received, and performs a process for registering said information processing apparatus in said second information processing apparatus when communication with said second information processing apparatus is possible.


33. An information processing apparatus according to Claim 31, wherein control means further performs a process for transmitting said function information of said information processing apparatus to said second information processing apparatus via said communication means.


34. An information processing apparatus according to

Claim 33, wherein said function information is transmitted to said second information processing apparatus via a third information processing apparatus on said network.

35. An information processing apparatus according to Claim 31 wherein said function information of said second information processing apparatus is received via the third information processing apparatus on said network.

36. An information processing apparatus according to Claim 25,

wherein, to transfer the main information, the connection procedure performed with said second information processing apparatus is performed via said third information processing apparatus connected to said network, and

wherein the main information transferred to and from said second information processing apparatus is transferred without the intervention of said third information processing apparatus.

37. An information processing method for transmitting main information to a communication party via a network, said information processing method comprising:

a first execution step of executing a connection procedure for transmitting main information to said

communication party;

a determination step of determining whether said communication party has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that said communication party has a transmission function but not a receiving function; and

a second execution step of executing a connection procedure for receiving the main information transmitted by said information processing apparatus when it is determined in the process of said determination step that said communication party has said bidirectional function.

38. A computer program for allowing a computer to perform a process for transmitting information to a communication party via a network, said computer program comprising:

a first execution step of executing a connection procedure for transmitting main information to said communication party;

a determination step of determining whether the communication party has a bidirectional function for transmitting the main information and for receiving the main information, or has a unidirectional function such that said communication party has a transmission function but not a

receiving function; and

a second execution step of executing a connection procedure for receiving the main information transmitted by said communication party when it is determined in said determination process that said communication party has said bidirectional function.